M/053/005

DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Norman H. Bangerter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

Bureau of Water Pollution Control
288 North 1460 West, P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6146

September 12, 1988

Ken A. Kluksdahl
Tenneco Minerals
P.O. Box 2650
955 North 1300 West #4
St. George, Utah 84770

Re: Gold Strike Mine
Plan Review Comments

Dear Mr. Kluksdahl:

We have reviewed the 4 August 1988 letter and the ground water monitoring program report, received by us on 26 August 1988.

Spent ore heap leach pads will be neutralized according to regulations in force at the time of decommissioning.

The proposed groundwater monitoring program for the project has been reviewed, our principal comments are as follows:

1. Timely indication of a breach of liners to any degree is of paramount importance. Indeterminate amounts of leakage could enter ground water in the meantime. Pollution of ground water is unacceptable to any degree.

2. In view of the highly faulted and fractured nature of the site, leakage beneath the pad may migrate in an unexpected manner; avoiding detection.

3. Effective containment of pollutants and remedial methods subsequent to leak detection are not adequately discussed.

4. Monitoring of all wells will have to continue beyond the length of operations at the site in view of the time required for detection of leakage, if any. Commitment of resources for extended monitoring and possible remedial action, if necessary, may far exceed costs of a leak detection system beneath the pads. We recommend that this aspect be carefully considered as a commitment to protect ground water in the area.

The leak detection system presented in the report, although very satisfactory can be modified to reduce costs and still achieve satisfactory leakage detection.

The Bureau of Water Pollution Control in their criteria for a heap leach pad liner system requires only twelve (12) inches of clay. It would be acceptable to the Bureau if the secondary clay liner for this project were twelve (12) inches thick instead of the eighteen (18) inches proposed. The six (6) inches of secondary clay liner thus eliminated could be used for the base of the leak detection system at no additional cost to the project.

Further more alternate means of providing seperation above and beneath the leak detection media other than filter fabric should be investigated. It is thought that sources of coarse material on site which contain fines or the engineered fill itself might satisfactorily perform this function. These and other site specific alternatives should be investigated and information about design suitability and cost comparison provided for review.

Please call Mack Croft or Charlie Dietz if there are any concerns or questions.

Sincerely,

Utah Water Pollution Control Committee

Don A. Ostler, P.E.
Executive Secretary

CDG/lme

cc: Mike Stairwalt, Tenneco Minerals, St. George
Marty Litus, Tenneco Minerals, Green River
Brian Buck, JBR Consultants
Lowell Braton, Division of Oil, Gas & Mining
Wayne Thomas, Southwestern District Health Dept.
Bill Dawson, Southwestern District Health Dept

1024p11